

IN THE CLAIMS

The pending claims are as follows:

Listing of Claims

Claims 1-22 (Cancelled).

23. (Previously Presented) A transmission method comprising:

a data sequence generation step of outputting, from a transmission apparatus with a plurality of antennas, one of a first data sequence comprising a plurality of signals representing the same data and a second data sequence comprising a plurality of signals representing varying data, according to a frame generation instruction signal including a symbol reporting a transmission method of transmission signals; and

a transmission processing step of transmitting the first data sequence or the second data sequence from the plurality of antennas.

24. (Previously Presented) The transmission method according to claim 23, wherein:

the signals transmitted from the plurality of antennas are transmitted as an orthogonal frequency division multiplexing (OFDM) signal; and

the first data sequence or the second data sequence is mapped to at least two of a plurality of subcarriers forming the OFDM signal.

25. (Previously Presented) The transmission method according to claim 23, further

comprising:

a modulation step of selecting a modulation scheme for modulating the transmission data of the first or second data sequence from a plurality of modulation schemes, and modulating the transmission data using the modulation scheme selected, wherein

a modulation scheme to apply to the first data sequence and a modulation scheme to apply to the second data sequence have the same maximum M-ary modulation index value.

26. (Previously Presented) The transmission method according to claim 23, wherein the symbol reporting the transmission method of the transmission signals is determined based on a channel.

27. (Previously Presented) The transmission method according to claim 23, further comprising:

a modulation step of selecting a modulation scheme for modulating the transmission data of the first or second data sequence from a plurality of modulation schemes, and modulating the transmission data using the modulation scheme selected, wherein

for the modulation scheme, at least one of the plurality of modulation schemes is selected while the first data sequence or the second data sequence is transmitted.

28. (Previously Presented) The transmission method according to claim 23, wherein, in the data sequence generation step, data represented by at least one of the plurality of signals included in the first data sequence or the second data sequence is cyclically shifted by a

predetermined period of time.

29. (Previously Presented) The transmission method according to claim 23, wherein, in the transmission processing step, an eigenmode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector, is used as a method for transmitting the second data sequence.

30. (Previously Presented) The transmission method according to claim 25, wherein, in the transmission processing step, an eigenmode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector, is used as a method for transmitting the second data sequence.

31. (Previously Presented) The transmission method according to claim 27, wherein, in the transmission processing step, an eigenmode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector, is used as a method for transmitting the second data sequence.

32. (Previously Presented) The transmission method according to claim 23, wherein, in the data sequence generation step, the first data sequence and the second data sequence are switched according to the number of communicating parties.

33. (Previously Presented) A radio communication system comprising a transmission

apparatus with a plurality of antennas and a reception apparatus that receives signals transmitted from the plurality of antennas of the transmission apparatus,

the reception apparatus comprising:

a channel fluctuation estimation section that estimates a channel fluctuation about the signals transmitted from the plurality of antennas of the transmission apparatus;

a transmission method requesting section that selects one of a first transmission method of transmitting a plurality of signals representing the same data from the plurality of antennas and a second transmission method of transmitting a plurality of signals representing varying data from the plurality of antennas, based on the estimated channel fluctuation, and sends a request for the selected transmission method to the transmission apparatus;

a modulation scheme requesting section that selects one of a plurality of modulation schemes based on the estimated channel fluctuation and sends a request for the selected modulation scheme to the transmission apparatus; and

a control section that controls whether or not to send the requests from the transmission method requesting section and the modulation scheme requesting section, according to procedures of communication with the transmission apparatus, and

the transmission apparatus comprising:

a generation section that generates signals corresponding to the transmission method requested from the reception apparatus; and

a transmission processing section that modulates the signals generated in the generation section according to the modulation scheme requested from the reception

apparatus, and transmits the modulated signals from the antennas.

34. (Previously Presented) A transmission apparatus comprising:

a plurality of transmission antennas;

a frame generation instruction section that outputs a frame generation instruction signal including a symbol reporting a transmission method of transmission signals;

a data sequence generation section that outputs one of a first data sequence comprising a plurality of signals representing the same data and a second data sequence comprising a plurality of signals representing varying data, according to the frame generation instruction signal; and

a transmission processing section that transmits the first data sequence or the second data sequence from the plurality of antennas.

35. (Previously Presented) The transmission apparatus according to claim 34, wherein:

the signals transmitted from the plurality of antennas are transmitted as an orthogonal frequency division multiplexing (OFDM) signal; and

the first data sequence or the second data sequence is mapped to at least two of a plurality of subcarriers forming the OFDM signal.

36. (Previously Presented) The transmission apparatus according to claim 34, further comprising:

a modulation section that selects a modulation scheme for modulating the transmission data of the first or second data sequence from a plurality of modulation schemes, and modulates

the transmission data using the modulation scheme selected, wherein

a modulation scheme to apply to the first data sequence and a modulation scheme to apply to the second data sequence have the same maximum M-ary modulation index value.

37. (Previously Presented) The transmission apparatus according to claim 34, further comprising:

a modulation section that selects a modulation scheme for modulating the transmission data of the first or second data sequence from a plurality of modulation schemes, and modulates the transmission data using the modulation scheme selected, wherein

for the modulation scheme, at least one of the plurality of modulation schemes is selected while the first data sequence or the second data sequence is transmitted.

38. (Previously Presented) The transmission apparatus according to claim 34, wherein the data sequence generation section cyclically shifts data represented by at least one of the plurality of signals included in the first data sequence or the second data sequence by a predetermined period of time.

39. (Previously Presented) The transmission apparatus according to claim 34, wherein the transmission processing section uses an eigenmode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector, as a method for transmitting the second data sequence.

40. (Previously Presented) The transmission apparatus according to claim 36, wherein the transmission processing section uses an eigenmode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector, as a method for transmitting the second data sequence.

41. (Previously Presented) The transmission apparatus according to claim 37, wherein the transmission processing section uses an eigenmode, in which one of a singular vector and an eigen vector of a channel matrix is used as a channel signature vector, as a method for transmitting the second data sequence.

42. (Previously Presented) The transmission apparatus according to claim 34, wherein the data sequence generation section switches the first data sequence and the second data sequence according to the number of communicating parties.

43. (Previously Presented) A reception apparatus comprising:
a transmission method determining section that selects one of a first transmission method of transmitting a plurality of signals representing the same data from a plurality of antennas and a second transmission method of transmitting a plurality of signals representing varying data from the plurality of antennas;
a modulation scheme determining section that selects one of a plurality of modulation schemes;
a control section that controls whether not to select the transmission method and the

modulation scheme in the transmission method determining section and the modulation scheme determining section according to procedures of communication with a communicating party; and a requesting section that conveys a request for the selected transmission method and modulation scheme to the communicating party.

44. (Previously Presented) The reception apparatus according to claim 43, wherein the control section performs control such that, while data is received, the transmission method determining section does not select the transmission method and the modulation scheme determining section alone selects the modulation scheme.

45. (Previously Presented) The reception apparatus according to claim 43, further comprising:

a channel estimation section that estimates at least one of a channel of received signals and a reception field intensity of the received signals, wherein

the transmission method determining section selects the transmission method based on the estimation result in the channel estimation section.

46. (Previously Presented) The reception apparatus according to claim 43, wherein a modulation scheme to apply to the first data sequence and a modulation scheme to apply to the second data sequence have the same maximum M-ary modulation index value.